

I Claim:

1. 1. A method for training a plurality of line drivers in a communication system; each
2 respective line driver of said plurality of line drivers being coupled with at least one
3 respective communication line at at least one respective connection locus; each said at
4 least one respective communication line being configured for communicating with
5 respective subscriber equipment at a respective subscriber locus distal from said
6 respective connection locus using at least one selected communication tone-set of a
7 plurality of communication tone-sets; the method comprising the steps of:
8 (a) selecting a test line driver from said plurality of line drivers;
9 (b) selecting a first said respective communication line coupled with said test line
10 driver as a test line;
11 (c) establishing synchrony with said respective subscriber equipment on said test line;
12 (d) choosing a respective said at least one selected communication tone-set;
13 (e) applying a test signal to said test line using said respective at least one selected
14 communication tone-set;
15 (f) determining noise experienced on said test line using said test signal;
16 (g) effecting evaluation of quality of said test line using said test signal; said quality
17 of said test line using said test signal being acceptable when said noise
18 experienced on said test line plus a noise margin is within a predetermined value
19 range;
20 (h) when said quality is not acceptable, selecting another respective said at least one
21 selected communication tone-set and repeating steps (e) through (g);
22 (i) when said quality is acceptable, designating said respective at least one selected
23 communication tone-set for operational employment by said test line;
24 (j) repeating steps (b) through (i) until a set of communication lines of said at least
25 one respective communication line coupled with said test line driver has been
26 evaluated; and
27 (k) repeating steps (a) through (j) until a set of line drivers of said plurality of line
28 drivers has been evaluated.

- 1 2. A method for training a plurality of line drivers in a communication system as recited
- 2 in Claim 1 wherein said noise margin is predetermined based upon the number of
- 3 communication lines included in said at least one communication line.

- 1 3. A method for training a plurality of line drivers in a communication system as recited
- 2 in Claim 1 wherein said noise margin is predetermined based upon the total number
- 3 of communication lines in said at least one communication line for all line drivers of
- 4 said plurality of line drivers.

- 1 4. A method for training a plurality of line drivers in a communication system as recited
- 2 in Claim 1 wherein said noise margin is dynamically determined for each iteration of
- 3 method step (g).

- 1 5. A method for training a plurality of line drivers in a communication system as recited
- 2 in Claim 4 wherein said noise margin is reset when said noise experienced on said test
- 3 line degrades beyond a predetermined value for a predetermined time duration.

- 1 6. A method for training a line driver in a communication system; said line driver being
- 2 coupled with at least one respective communication line at at least one respective
- 3 connection locus; each said at least one respective communication line being
- 4 configured for communicating with respective subscriber equipment at a respective
- 5 subscriber locus distal from said respective connection locus using at least one
- 6 selected communication tone-set of a plurality of communication tone-sets; the
- 7 method comprising the steps of:
 - 8 (a) selecting a first said respective communication line coupled with said line driver
 - 9 as a test line;
 - 10 (b) establishing synchrony with said respective subscriber equipment on said test line;
 - 11 (c) choosing a respective said at least one selected communication tone-set;
 - 12 (d) applying a test signal to said test line using said respective at least one selected
 - 13 communication tone-set;

14 (e) determining noise experienced on said test line using said test signal;

15 (f) effecting evaluation of quality of said test line using said test signal; said quality

16 of said test line using said test signal being acceptable when said noise

17 experienced on said test line plus a noise margin is within a predetermined value

18 range;

19 (g) when said quality is not acceptable, selecting another said selected communication

20 tone-set and repeating steps (d) through (f);

21 (h) when said quality is acceptable, designating said respective at least one selected

22 communication tone-set for operational employment by said test line; and

23 (i) repeating steps (a) through (h) until a set of communication lines of said at least

24 one respective communication line coupled with said test line driver has been

25 evaluated.

1 7. A method for training a line driver in a communication system as recited in Claim 6
2 wherein said noise margin is predetermined based upon the number of
3 communication lines included in said at least one communication line.

1 8. A method for training a line driver in a communication system as recited in Claim 6
2 wherein said noise margin is dynamically determined for each iteration of method
3 step (f).

1 9. A method for training a plurality of line drivers in a communication system as recited
2 in Claim 8 wherein said noise margin is reset when said noise experienced on said test
3 line degrades beyond a predetermined value for a predetermined time duration.

1 10. A method for achieving a desired signal-to-noise ratio for a plurality of
2 communication lines coupled with a plurality of line drivers in a communication
3 system; each respective line driver of said plurality of line drivers being coupled with
4 at least one respective communication line of said plurality of communication lines at
5 at least one respective connection locus; each said at least one respective

6 communication line being configured for communicating with respective subscriber
7 equipment at a respective subscriber locus distal from said respective connection
8 locus using at least one selected communication tone-set of a plurality of
9 communication tone-sets; the method comprising the steps of:
10 (a) selecting a test line driver from said plurality of line drivers;
11 (b) selecting a first said respective communication line coupled with said test line
12 driver as a test line;
13 (c) establishing synchrony with said respective subscriber equipment on said test line;
14 (d) choosing a respective said selected communication tone-set;
15 (e) applying a test signal to said test line using said respective selected
16 communication tone-set;
17 (f) determining noise experienced on said test line using said test signal;
18 (g) effecting evaluation of quality of said test line using said test signal; said quality
19 of said test line using said test signal being acceptable when said noise
20 experienced on said test line plus a noise margin is within a predetermined value
21 range of said signal-to-noise ratio;
22 (h) when said quality is not acceptable, selecting another said respective selected
23 communication tone-set and repeating steps (e) through (g);
24 (i) when said quality is acceptable, designating said selected communication tone-set
25 for operational employment by said test line;
26 (j) repeating steps (b) through (i) until a set of communication lines of said at least
27 one respective communication line coupled with said test line driver has been
28 evaluated; and
29 (k) repeating steps (a) through (j) until a set of line drivers of said plurality of line
30 drivers has been evaluated.

1 11. A method for achieving a desired signal-to-noise ratio for a plurality of
2 communication lines coupled with a plurality of line drivers in a communication
3 system as recited in Claim 11 wherein said noise margin is predetermined based upon
4 the number of communication lines included in said at least one communication line.

- 1 12. A method for achieving a desired signal-to-noise ratio for a plurality of
- 2 communication lines coupled with a plurality of line drivers in a communication
- 3 system as recited in Claim 11 wherein said noise margin is predetermined based upon
- 4 the total number of communication lines in said at least one communication line for
- 5 all line drivers of said plurality of line drivers.
- 1 13. A method for achieving a desired signal-to-noise ratio for a plurality of
- 2 communication lines coupled with a plurality of line drivers in a communication
- 3 system as recited in Claim 11 wherein said noise margin is dynamically determined
- 4 for each iteration of method step (g).
- 1 14. A method for achieving a desired signal-to-noise ratio for a plurality of
- 2 communication lines coupled with a plurality of line drivers in a communication
- 3 system as recited in Claim 13 wherein said noise margin is reset when said noise
- 4 experienced on said test line degrades beyond a predetermined value for a
- 5 predetermined time duration.

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